

Mental and sexual well-being in non-binary and genderqueer individuals

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ABSTRACT

Background: Non-binary and genderqueer (NBGQ) individuals do not identify with a binary gender identity. Some but not all NBGQ individuals identify as transgender, and it is currently unclear on which aspects of mental and sexual well-being NBGQ and binary transgender individuals may differ.

Aim: To compare NBGQ, binary transgender and cisgender individuals on variables related to mental well-being, sexual well-being, and sexual self-concept discrepancies.

Methods: We conducted an online questionnaire study in 125 transgender men, 72 transgender women, 78 NBGQ individuals, 98 cisgender men, and 107 cisgender women.

Results: For most variables, NBGQ individuals did not differ from binary transgender individuals. These two groups differed only on gender dysphoria and transgender specific body image worries, which were both lower in the NBGQ group. Compared to the cisgender group, NBGQ individuals scored higher on gender dysphoria, actual/ought sexual self-concept discrepancies, and actual/ideal sexual self-concept discrepancies, and lower on general life satisfaction and sexual esteem related to body perception.

Discussion: These results offer a first quantitative analysis of sexual well-being in NBGQ individuals, and highlight that – while both groups face unique challenges – NBGQ individuals encounter similar difficulties concerning mental and sexual well-being as binary transgender individuals.

KEYWORDS

Genderqueer;
mental well-being;
non-binary;
sexual self-concept;
sexual well-being;
transgender

Introduction

The term ‘transgender person’ refers to individuals whose gender identity is incongruent with their sex assigned at birth. Transgender men, for example, identify as men and had a female sex assigned at birth, while transgender women identify as women and had a male sex assigned at birth. Other individuals do not identify (entirely) as a man or a woman but situate themselves somewhere else on the ‘gender spectrum’. These individuals are often referred to as non-binary and genderqueer (NBGQ) (Richards et al., 2016). Some NBGQ individuals even experience their identity as *outside* of the continuum between man and woman, which leads to many different identities and identity markers such as ‘bigender’, ‘gender neutral’, ‘pangendered’, and ‘gender fluid’

(Bockting, 2008; Davidson, 2016). In this paper, we will use the term ‘binary transgender individuals’ to indicate individuals who identify as transgender *and* as either man or woman, and we will use the term ‘NBGQ individuals’ for individuals whose gender identity falls outside of the gender binary, regardless of transgender identity.

Estimates of the prevalence of NBGQ identities vary (Goodman et al., 2019). Figures based on clinical samples are considered underestimates, because only a small proportion of this group seeks gender affirmative treatment (Beek et al., 2015; Richards et al., 2016). Van Caenegem et al. (2015) reported a prevalence of non-binary identities of 1.8% and 4.1% in participants with a male or female sex assigned at birth, respectively, in the general Belgian population. In a large

Dutch population sample, it was found that 4.6% of participants with a male sex assigned at birth and 3.2% of participants with a female sex assigned at birth indicated experiencing an 'ambiguous gender identity' (Kuyper & Wijzen, 2014). However, some authors argue that issues related to language and discrimination may stand in the way of obtaining a correct estimate, for instance because NBGQ individuals are forced to define their identity in terms of a binaried language system (Nicholas, 2018). In general, it seems that especially younger people (Clark et al., 2018) and people with a female sex assigned at birth (Burgwal et al., 2019; Jones et al., 2019) identify as NBGQ.

While not all NBGQ individuals identify as transgender, NBGQ and binary transgender individuals have several things in common, in the sense that they do not fully identify with their sex assigned at birth (Fiani & Han, 2018), might consider gender affirming therapy such as hormone therapy or surgery (Eyssel et al., 2017), and often face stigmatization and discrimination related to their gender minority status (White Hughto, Reisner, & Pachankis, 2015). Research investigating these parameters in binary identifying transgender individuals (i.e., trans women and trans men) revealed, in general, worse mental (Dhejne et al., 2016) and sexual well-being (Kerckhof et al., 2019) compared to cisgender individuals (i.e., individuals whose gender identity is congruent with their sex assigned at birth). Gender affirming treatment seems to have a positive effect on these factors (Dhejne et al., 2016; Murad et al., 2010). Yet, there is less consensus on mental health in NBGQ individuals. They report worse mental health than binary transgender individuals in terms of general wellbeing (Burgwal et al., 2019) and anxiety and depression (Thorne et al., 2018) according to some studies, while others have indicated that NBGQ individuals report better mental health in terms of psychological functioning (Jones et al., 2019) and satisfaction with life (Rimes et al., 2017). The Minority Stress Model (MSM; Meyer, 1995, 2003) explains why it is likely for NBGQ individuals to suffer from mental and physical health problems. In short, the MSM holds that being part of a societal minority results in worse health

because of discrimination and a phobic culture (Meyer, 1995, 2003). Indeed, the conflict with their environment/culture that NBGQ experience has been well documented in a qualitative study (Fiani & Han, 2018). In this study, NBGQ individuals described how living in their true gender was often unattainable in their environment, how they felt social pressure to conform with traditional gender labeling processes, and how – especially compared to binary transgender individuals – they felt as if they lacked a sense of community. Another frequently reported mechanism by which the societal minority status of NBGQ individuals adds to their distress, is the use of incorrect pronouns, which are often binary and hence misgendering NBGQ individuals (Eyssel et al., 2017; Guss et al., 2019). However, some studies have suggested that NBGQ individuals might show forms of resilience unique to them compared to binary transgender individuals, such as reclaiming their name, body and identity away from societal norms (Fiani & Han, 2018), which could explain the elevated mental health in NBGQ individuals reported by Jones et al. (2019) and Rimes et al. (2017).

Even less is known about sexual well-being (which is closely related to mental health; see Coelho et al., in press; Forbes et al., 2016; Rosen & Althof, 2008) in this group. Sexual well-being is defined as encompassing individual affective components (e.g., sexual satisfaction), interpersonal components (e.g., relationship satisfaction), and socio-cultural components (e.g., public stigma) (Lorimer et al., 2019). A qualitative study by Lindley et al. (2020) has indicated that interpersonal and socio-cultural components can have a negative effect on sexual satisfaction in NBGQ individuals, for instance through limitations placed on participants' gender fluidity by their partner. To our knowledge, there are no quantitative studies investigating sexuality of NBGQ individuals, despite the fact that the World Health Organization considers sexual satisfaction/health and important determinant of quality of life (WHOQOL Group, 1994). However, the struggles described in the study by Fiani and Han (2018), such as the experience of lack of role models, could possibly relate to actual/ought (sexual) self-concept discrepancies. These discrepancies

were first described by Higgins (1987) and refer to the discrepancy between one's actual self-concept ("Who *am* I?") and one's ought self-concept ("Who *should* I be?"). While NBGQ individuals' actual sexual self-concept is likely based on their actual gender identity, their ought sexual self-concept is influenced by common ideas about sexuality in society (i.e., "sexual situations and scripts mainly involve *binary* identifying individuals"). This discrepancy, like all self-concept discrepancies, can cause distress and frustration if they grow too large and the individual does not manage to cope with them (Higgins, 1987). Previous research has shown that actual/ought self-discrepancies can negatively influence sexual adjustment in cohorts of White women (Katz & Farrow, 2000), and that actual/ought *sexual* self-concept discrepancies influence feelings of dejection in study groups of Black women (Holmes, 2002), indicating the close connection between self-concept discrepancies, identity (and associated minority status) and sexuality.

Given that so little is known about the mental and sexual well-being of NBGQ individuals, this study aims to give a broad overview of factors related to these concepts. We conducted an online questionnaire study including NBGQ individuals as well as binary transgender and cisgender individuals. In this study, we explore mental well-being (anxiety, depression, and general life satisfaction), sexual well-being (sexual self-esteem, sexual satisfaction, and sexual worries), and actual/ideal and actual/ought sexual self-concept discrepancies. Given the explorative nature of this study, which is the first to explicitly address this question empirically, we restrained from formulating concrete *a priori* hypotheses about group differences and their directions. We hope this study might inform clinicians about mental health and sexuality challenges specific for NBGQ people, as well as identify relevant variables for future studies involving this population.

Methods

Participants

Participants had to be at least 18 years old. In total, 514 participants completed at least part of

the survey. From these, three were removed from the dataset because they were younger than 18 years old; three were removed because they did not enter their age; five were removed because they did not enter any information on gender identity; 21 were removed because of a clearly invalid response profile; and two were removed because they indicated having an intersex condition assigned at birth (i.e., at birth their sex could not be assigned as either male or female). The final sample consisted of 480 participants (age; $M = 30.208$, $SD = 11.297$), that fell into one of five groups: transgender men ($n = 125$), transgender women ($n = 72$), cisgender men ($n = 98$), cisgender women ($n = 107$), non-binary/genderqueer (NBGQ) ($n = 78$). Two hundred fifty five participants completed the questionnaire in English and 225 participants completed it in Dutch (all questionnaires were back-to-back translated).

Procedure

After approval by the Ethics Review Committee Psychology and Neuroscience (ERCPN) of Maastricht University (approval code: 225_95_07_2020), the survey was programmed in Qualtrics. The study was administered online between July 16th and October 2nd 2020. Transgender participants were mainly recruited online via social media in the LGBTQI+ community, including the use of Facebook groups, Twitter, and support organizations advertising the study. In order to reach cisgender people, we advertised the study within the broader university and sex research community. Finally, we asked participants who had completed the survey to spread the link among potentially interested people in their network.

Participants declared informed consent at the beginning of the survey, which took 15-25 minutes in total per participant. As a reward, participants could enter a raffle for a €10 gift voucher at the end of the survey (one voucher per 20 participants; participants were made aware of the odds). The email addresses provided for the raffle were stored separately from the questionnaire responses.

Measures

Demographics

We developed a questionnaire including open questions on age, country of residence, mother tongue, and the number of children participants had, as well as multiple choice questions on educational level, occupation, housing (e.g., living with family, living alone), and relationship status and length. Sex assigned at birth was assessed via a multiple-choice question including Male, Female, Intersex, and an open option. Gender identity was assessed via a multiple-choice question including Man, Woman, Non-Binary, and an open option. Based on these two questions, participants were assigned to the binary cisgender group (in case responses were Male+Man, or Female+Woman), the binary transgender group (in case responses were Male+Woman, or Female+Man), or the NBGQ group (in case they indicated identifying as Non-Binary). Responses from participants who indicated identifying with another gender identity using the open option were all inspected, with any indication of the participant not identifying fully within the gender binary resulting in an assignment to the NBGQ group (e.g., 'non-binary transman' being assigned to the NBGQ group). Furthermore, participants were asked whether they identified as transgender, in which case they were also asked when they had first become aware of their transgender identity and whether they had received a diagnosis of gender dysphoria, which is defined as the clinically significant distress one can feel due to the incongruence between sex assigned at birth and gender identity (American Psychiatric Association, 2013). Sexual orientation was assessed by presenting two sliding scales (one for men, one for women) on which participants could indicate how much they were attracted to these genders in general (scored from 0 to 100, with lower scores indicating lower attraction). For instance, someone who is generally attracted to women but not to men could put the slider close to 100 for women and close to 0 for men; someone who is generally attracted to both could put them both close to 100; and someone who feels no attraction to either men or women could put both sliders close to 0. Finally, participants

who indicated identifying as transgender were asked whether they were on a waiting list for gender affirming treatment (GAT) at the time of filling in the survey and what type of GAT they had already received (gender affirming hormone therapy (GAHT) and/or gender affirming surgery (GAS)), and whether they (still) desire receiving GAT in the future. Because the data on treatment (desire) in the transgender group is not of relevance for our current research questions, they will not be presented here.

Mental well-being

Feelings of gender dysphoria were assessed using the Utrecht Gender Dysphoria Scale (UGDS; Cohen-Kettenis & van Goozen, 1997; Steensma et al. 2013), which has two different versions depending on the sex assigned at birth of the respondent (male/female). Each version consists of 12 items (e.g., "I would prefer not living to living as a boy/man", assigned male at birth version) which participants had to rate on a five-point scale ranging from *Entirely disagree* to *Entirely agree*. Because some of the questions would not apply to transgender people who have already undergone certain types of GAT (e.g. "I hate having breasts" for a transgender men who has undergone mastectomy), we included the response option not applicable, which was scored to one (low gender dysphoria). Participants' final score on the UGDS was calculated by averaging the scores for all items, with the final scores ranging from one (no gender dysphoria) to five (high gender dysphoria). Both versions had high reliability in our sample (Cronbach's $\alpha = .98$ for male sex assigned at birth version; Cronbach's $\alpha = .95$ for female sex assigned at birth version).

Because the UGDS does not only include items indicating dysphoria related to the sex assigned at birth (e.g., "I feel unhappy because I have a masculine body" for the male sex assigned at birth version), but also items referring to desiring to live according to the 'opposite side' of the gender binary (e.g., "Only as a girl/woman, my life would be worthwhile" for the male sex assigned at birth version), it is possible that lower UGDS scores in the NBGQ group compared to the binary transgender group would not reflect

differences in experienced incongruence with their sex assigned at birth per se, but differences in the identification with the opposite gender from a binary perspective. In order to check whether differences in gender identity (instead of differences in dysphoria related to the sex assigned at birth) could explain possible differences in UGDS scores, we performed an exploratory factor analysis on the female sex assigned at birth version of the UGDS scale (since there were too little NBGQ participants with a male sex assigned at birth) using the data from the binary transgender and NBGQ participants. Of the resulting three factors, the first one did indeed consist of items referring to identification with a male gender (e.g., “I prefer to behave like a boy/man”), while the second factor consisted of items referring to dissatisfaction with the female sex assigned at birth (e.g., “Living as a girl/woman is something positive to me”) and the third consisted of items referring to body image (e.g., “I hate seeing myself naked in the mirror”). Therefore, investigating differences on the factor scores, we can explore whether the (female sex assigned at birth) groups differ in identification with a male gender (factor 1), distress related to the female sex assigned at birth (factor 2), or body image (factor 3).

We assessed anxiety and depression using the Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983). The questionnaire consists of a seven-item anxiety scale (e.g., “Worrying thoughts go through my mind”) (Cronbach’s $\alpha = .84$) and a seven-item depression scale (e.g., “I feel as if I am slowed down”) (Cronbach’s $\alpha = .66$), presenting participants four response options that varied per statement. For each scale, scores range from 0 to 21, with higher scores indicating higher anxiety/depression. A score under 7 is considered normal, scores between 8 and 10 are considered borderline, and scores higher than 10 are considered abnormal.

General life satisfaction was assessed using the Satisfaction With Life Scale (SWLS; Diener et al., 1985). The questionnaire consists of five items (e.g., “In most ways my life is close to my ideal”) (Cronbach’s $\alpha = .91$) which had to be rated on a seven-point Likert scale ranging from *Strongly disagree* to *Strongly agree*. Sum scores ranged

from 7 to 35, with higher scores indicating higher life satisfaction.

Sexual well-being

The measure of Sexual Esteem, which is defined as a person’s self-evaluation of worth as a sexual being, was taken from a larger questionnaire on sexual self-concept (Buzwell & Rosenthal, 1996; adapted by Deutsch, Hoffman, & Wilcox, 2014). All items were statements that had to be rated on a five-point scale ranging from *Strongly disagree* to *Strongly agree*. The scale consists of four subscales. The Behavior subscale assesses perceptions about one’s sexual behavior (five items, e.g., “I feel comfortable with my sexuality”, Cronbach’s $\alpha = .80$). The Body Perception subscale assesses body satisfaction and feelings of bodily maturity (nine items, e.g., “When other people look at me they must think I have a poorly developed body”, Cronbach’s $\alpha = .66$). The Conduct subscale assesses feelings of adequacy in sexual situations and with a partner (four items, e.g., “It is very hard for me to know how to behave in a sexual situation”, Cronbach’s $\alpha = .78$). The Attractiveness subscale assesses feelings of attractiveness and sexual desirability (six items, e.g., “I am confident that people find me attractive”, Cronbach’s $\alpha = 0.68$). A score ranging from one to five was calculated for each subscale by averaging all the item scores.

Trans-specific body image worries were assessed using the T-WORRY (Dharma et al., 2019), which was only presented to participants identifying as transgender. The scale consists of seven items (Cronbach’s $\alpha = .79$), representing worries transgender people could have while having sex, that had to be rated on a five-point scale ranging from *Not at all* to *Very*. The T-WORRY questionnaire covers both general body image anxiety (e.g., “When I think about having sex, I worry that other people think my body is unattractive”) and trans-related anxiety (e.g., “When I think about having sex, I worry that once I’m naked, people will not see me as the gender I am”). Sum scores ranged from 5 to 35, with higher scores indicating more worries.

Sexual satisfaction was assessed using the Global Measure of Sexual Satisfaction (GMSEX; Lawrance & Byers, 1995), a five-item measure

assessing satisfaction on a seven-point scale. Scores ranged from 7 to 35, with higher scores indicating higher sexual satisfaction. The scale showed sufficient reliability in our sample (Cronbach's $\alpha = .96$).

Sexual self-concept discrepancies

We developed a concise measure of two types of sexual self-concept discrepancies (based on Higgins, 1987): actual/ideal and actual/ought. After having read a short description of the definition of the actual (i.e., all the ideas a person has about who they *currently are* as a sexual person), ideal (i.e., all the ideas a person has about who they *want to be* as a sexual person), and ought (i.e., all the ideas a person has about who they *should be* as a sexual person) sexual self-concept, participants used a sliding scale to indicate how large the discrepancies between their self-concepts are. The positions on the scale were coded into a score ranging from 0 to 100, with higher scores indicating a higher SSC discrepancy.

Analysis

All statistical analyses were performed using the software JASP (JASP Team, 2020). We applied a significance threshold of $p = .01$ for all analyses, with a Bonferroni correction per variable cluster (mental well-being, sexual well-being, and sexual self-concept discrepancies). Group differences on continuous variables were analyzed using one-way ANOVAs, while chi-square tests of independence were applied in case of categorical variables. In

case of a significant ANOVA outcome, post-hoc comparisons were analyzed applying the Tukey HSD test for multiple comparisons.

Results

Sample descriptives

Sample descriptives are presented in Table 1 (continuous variables) and Table 2 (categorical variables). Sixty of the NBGQ participants (77%), 125 of the binary transgender participants (63.4%), and 107 of the cisgender participants (52.2%) had a female sex assigned at birth, which was a significant difference ($X^2(2, N=480) = 15.46$). The groups did not differ in terms of age. Most participants indicated living in the Netherlands ($n=261$, 54.4%), in the United States of America ($n=90$, 18.8%), or in Belgium ($n=62$, 12.9%).

The three groups differed significantly with regard to attraction to women (with the cisgender group scoring lower than both other groups; $p < .001$ for both), but not regarding attraction to men. Chi-square tests indicated that the groups differed significantly in terms of occupation and housing, but not in terms of education or relationship status. For occupation, this difference was mainly driven by relatively high unemployment rates in the NBGQ and binary transgender groups, and relatively high fulltime employment rates in the cisgender groups. For housing, the difference was mainly driven by the NBGQ and binary transgender groups more frequently indicating they lived with their parents or family,

Table 1. Descriptive statistics and group differences for age and sexual orientation.

	NBGQ	Binary transgender	Cisgender	Group difference
	<i>M</i>	<i>M</i>	<i>M</i>	
	<i>SD</i>	<i>SD</i>	<i>SD</i>	
	(<i>n</i>)	(<i>n</i>)	(<i>n</i>)	
Age	30.55	31.06	29.26	$F(477,2) = 1.32$
	13.10	11.48	10.33	$p = .267$
	(78)	(197)	(205)	
Attraction to men	57.89	52.97	53.83	$F(408,2) = .46$
	37.31	35.88	38.90	$p = .633$
	(71)	(190)	(150)	
Attraction to women	71.38	67.18	46.833	$F(408,2) = 18.85$
	32.37	33.64	36.516	$p < .001^*$
	(71)	(190)	(150)	

NBGQ = non-binary/genderqueer individuals, *M* = mean, *SD* = standard deviation, *n* = sample size.

Age is presented in years; attraction is expressed on a scale from 0 to 100. The significance threshold is $p < .017$ (significant differences indicated with *).

Table 2. Descriptive statistics and group differences for romantic relationships, education, occupation, and housing.

		NBGQ	Binary transgender	Cisgender	Group difference
		<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	
Relationship	Yes	45 (57.69)	91 (46.19)	120 (58.54)	$\chi^2(2, N=480) = 6.86$ $p = .032$
	No	33 (42.31)	106 (53.81)	85 (41.46)	
Education	No high school	1 (1.28)	6 (3.08)	2 (.95)	$\chi^2(2, N=477) = 9.06$ $p = .060$
	High school	19 (24.36)	78 (40)	74 (36.27)	
	College/University	58 (74.36)	111 (56.92)	128 (62.75)	
Occupation	Employed	34 (43.59)	99 (50.25)	113 (55.39)	$\chi^2(2, N=478) = 25.36$ $p = .001^*$
	Student	28 (35.9)	61 (30.96)	71 (34.8)	
	Unemployed/retired	16 (20.51)	37 (18.78)	20 (9.8)	
Housing	Alone	17 (21.79)	64 (32.49)	46 (22.44)	$\chi^2(2, N=480) = 27.26$ $p = .002^*$
	With partner	26 (33.33)	51 (25.89)	75 (36.59)	
	With parents/family	20 (25.64)	52 (26.4)	29 (14.15)	
	Student housing/ friends	15 (19.23)	28 (14.21)	55 (26.83)	
	Other	0 (0)	2 (1.02)	0 (0)	

NBGQ = non-binary/genderqueer individuals, *n* = sample size.The significance threshold is $p < .013$ (significant differences indicated with *).

while the cisgender group indicated mostly living with a partner.

Of the participants in the NBGQ group, 62 indicated having a transgender identity (79.5%), and 26 of them had received a diagnosis of gender dysphoria. In the NBGQ group, sixteen participants were receiving hormone treatment (27.12%) and twelve had received some form of gender affirming surgery (20.34%). In the binary transgender group, 140 participants indicated receiving hormone treatment (81.87%) and 87 indicated having received some form of gender affirming surgery (50.88%).

Mental well-being

Table 3 presents the descriptive statistics and outcomes of the one-way ANOVA group comparisons on anxiety, depression, general life satisfaction, and gender dysphoria. We applied a significance threshold of $p = .01/4 = .003$. The NBGQ and binary trans- and cisgender groups differed significantly on general life satisfaction and gender dysphoria, but not on depression and anxiety (although there was a trend for the latter). Post-hoc Tukey HSD tests indicated that all pairwise comparisons on

gender dysphoria were significant ($p < .001$), with the NBGQ group scoring higher than the cisgender group, but lower than the binary transgender group. Post-hoc comparisons for general life satisfaction indicated that the NBGQ scored lower than the cisgender group ($p = .001$) but not different from the binary transgender group ($p = .945$). Additionally, the binary transgender group scored lower than the cisgender group ($p < .001$).

Follow-up analyses Utrecht Gender Dysphoria Scale

As shown in Table 3, the binary transgender and the NBGQ group differ significantly in UGDS scores, with the binary transgender group scoring higher on gender dysphoria. We therefore investigated possible differences between the transgender and NBGQ on the three factors of the female version of the UGDS (items referring to identification with a male gender; items referring to dissatisfaction with the female sex assigned at birth; and items referring to body image). Independent sample t-tests indicated that the NBGQ and binary transgender groups differed significantly on all three factors ($p < .001$ for all

Table 3. Descriptive statistics and group differences on anxiety and depression (HADS), general life satisfaction (SWLS), and gender dysphoria (UGDS).

	NBGQ	Binary transgender	Cisgender	
	<i>M</i>	<i>M</i>	<i>M</i>	
	<i>SD</i>	<i>SD</i>	<i>SD</i>	
	(<i>n</i>)	(<i>n</i>)	(<i>n</i>)	Group difference
Anxiety	9.04	8.90	7.62	F(397,2) = 4.21
	4.90	4.84	3.89	<i>p</i> = .016
	(71)	(165)	(164)	
Depression	6.28	5.94	5.85	F(397,2) = 0.41
	3.57	3.92	2.62	<i>p</i> = .667
	(71)	(165)	(164)	
General life satisfaction	18.99	18.64	22.78	F(389,2) = 13.93
	7.30	7.42	7.54	
	(68)	(164)	(160)	<i>p</i> < .001*
Gender dysphoria	3.47	4.34	1.58	F(437,2) = 869.22
	0.75	0.60	0.61	<i>p</i> < .001*
	(77)	(190)	(173)	

NBGQ = non-binary/genderqueer individuals, *M* = mean, *SD* = standard deviation, *n* = sample size. The significance threshold is *p* < .013 (significant differences indicated with *).

three tests), indicating that while the groups did indeed differ in the degree to which they identify with a male gender identity, the NBGQ group also scored lower on distress concerning their female sex assigned at birth. This supports the conclusion that the NBGQ individuals in our sample did indeed report less gender dysphoria than the binary transgender participants (with female sex assigned at birth).

Sexual well-being

Table 4 presents the descriptive statistics and outcomes of the one-way ANOVA group

comparisons on the four sexual self-esteem components, transgender specific body worries, and sexual satisfaction. We applied a significance threshold of $p = .01/6 = .002$. The three groups differed significantly on all six variables. Post-hoc group comparison indicated that the NBGQ group and the binary transgender group did not differ on any of the variables except for transgender specific body worries ($p < .001$), with only a trend toward a difference in sexual satisfaction ($p = .066$, with NBGQ individuals scoring higher). Compared to the cisgender group, the NBGQ scored lower on all variables ($p = .007$ for Sexual esteem – body perception),

Table 4. Descriptive statistics and group differences on sexual esteem (behavior, body perception, conduct, and attractiveness), transgender specific body image worries (TWORRY), and sexual satisfaction (GMSEX).

	NBGQ	Binary transgender	Cisgender	ANOVA
	<i>M</i>	<i>M</i>	<i>M</i>	<i>F</i>
	<i>SD</i>	<i>SD</i>	<i>SD</i>	
	(<i>n</i>)	(<i>n</i>)	(<i>n</i>)	
Sexual esteem – behavior	3.71	3.53	4.06	13.26
	0.96	0.93	0.97	<i>p</i> < .001*
	(71)	(167)	(166)	
Sexual esteem – body perception	3.30	3.28	3.58	9.84
	0.64	0.64	0.66	<i>p</i> < .001*
	(71)	(167)	(166)	
Sexual esteem – conduct	3.24	3.00	3.69	16.36
	1.11	1.11	1.10	<i>p</i> < .001*
	(69)	(167)	(165)	
Sexual esteem – attractiveness	3.28	3.16	3.58	10.37
	.91	0.85	0.82	<i>p</i> < .0
	(70)	(167)	(165)	
Transgender specific body worries	13.89	17.18	n.a.	11.37
	6.46	6.14		<i>p</i> < .001*
	(55)	(158)		
Sexual satisfaction	25.25	22.70	28.20	19.26
	7.96	9.42	6.27	<i>p</i> < .001*
	(71)	(162)	(163)	

NBGQ = non-binary/genderqueer individuals, *M* = mean, *SD* = standard deviation, *n* = sample size. Note: the TWORRY questionnaire was only completed by individuals who identify as transgender, hence there was no data from the cisgender group. The significance threshold is $p < .001$ (significant differences indicated with *).

although for most this remained only at trend level ($p = .023$ for Sexual esteem – behavior; $p = .013$ for Sexual esteem – conduct; $p = .037$ for Sexual esteem – attractiveness; $p = .026$ for sexual satisfaction). The cisgender group scored significantly higher than the binary transgender group on all variables ($p < .001$ for all).

Sexual self-concept discrepancies

Table 5 presents the descriptive statistics and outcomes of the one-way ANOVA group comparisons on actual/ideal sexual self-concept discrepancies and actual/ought sexual self-concept discrepancies. We applied a significance threshold of $p = .01/2 = .005$. Post-hoc group comparisons indicated that for both discrepancies, the NBGQ group scored significantly higher than the cisgender group ($p < .001$), but not different from the binary transgender group ($p = .247$ for actual/ideal, $p = .979$ for actual/ought). Additionally, the binary transgender group scored higher than the cisgender group for both discrepancies ($p < .001$).

Discussion

In this study, we investigated mental well-being, sexual well-being, and sexual self-concept discrepancies in NBGQ individuals using an online questionnaire. We compared this group to a group of binary identifying transgender individuals and a group of binary identifying cisgender individuals. In terms of mental well-being, we found that the groups did not differ in their level of anxiety and depression, but the NBGQ group did score lower on general life satisfaction than the cisgender group. Their anxiety and depression

scores did, however, not differ from binary transgender individuals. NBGQ individuals scored higher on gender dysphoria than cisgender individuals, but lower than binary transgender individuals. In terms of sexual well-being, the binary identifying transgender group scored significantly higher on transgender specific body-image worries than the NBGQ group, but there were no differences in terms of sexual esteem or satisfaction between these two groups. Compared to the cisgender group, the NBGQ only scored lower on sexual esteem related to body perception. Interestingly, for the variables related to sexual well-being on which the NBGQ did not significantly differ from the other two groups (sexual esteem related to behavior, conduct, and attractiveness, and sexual satisfaction), a non-significant pattern emerged in which the NBGQ scores seem to fall in between the scores from the other two groups. Finally, for both actual/ideal and actual/ought sexual self-concept discrepancies, NBGQ participants scored significantly higher than cisgender participants, but not different from binary transgender participants. In the following paragraphs, we will elaborate on this pattern of findings.

Mental well-being in NBGQ individuals

In the current sample, we found significant group differences for gender dysphoria, on which the NBGQ group scored higher than the cisgender group, but lower than the binary transgender group. It has previously been pointed out that the UGDS we employed possibly fails to reflect NBGQ individuals' experiences (McGuire et al., 2020), as some items reflect a desire to live in the gender (role) 'opposite' to the one assigned

Table 5. Descriptive statistics and group differences on actual/ideal and actual/ought sexual self-concept discrepancies.

	NBGQ	Binary transgender	Cisgender	ANOVA
	<i>M</i>	<i>M</i>	<i>M</i>	<i>F</i>
	<i>SD</i>	<i>SD</i>	<i>SD</i>	
	(<i>n</i>)	(<i>n</i>)	(<i>n</i>)	
Actual/Ideal SSCD	49.41	55.86	34.70	25.54
	28.10	28.60	26.16	$p < .001^*$
	(66)	(156)	(178)	
Actual/Ought SSCD	49.19	50.02	31.82	19.47
	30.21	29.99	26.00	$p < .001^*$
	(64)	(152)	(175)	

NBGQ = non-binary/genderqueer individuals, *M* = mean, *SD* = standard deviation, *n* = sample size, SSCD = sexual self-concept discrepancy. The significance threshold is $p < .025$ (significant differences indicated with *).

at birth. We therefore conducted a factor analysis to investigate whether the differences between the NBGQ and binary transgender group might have been driven by a difference in gender role desire rather than a difference in gender dysphoria/congruence. We found that NBGQ individuals with a female sex assigned at birth did indeed score lower than transgender men on all factors, including the items relating to actual dissatisfaction with their sex assigned at birth. This is in line with the findings by Jones et al. (2019), who found that NBGQ showed higher gender congruence related the chest, genitalia, and secondary sex characteristics than binary transgender individuals, but lower gender congruence on these aspects than cisgender individuals. Note, however, that the same study also revealed that there were no differences between NBGQ and binary transgender individuals on gender congruence related to appearance or social gender role recognition, which was lower in both groups than in their cisgender sample (Jones et al., 2019). This is inconsistent with our findings, because many of the items of the UGDS also refer to social roles and appearance. It is difficult to explain this inconsistency because Jones et al. (2019) sampling method and sample size were similar to ours, and the samples even showed similar distributions in terms of sex assigned at birth and age. We did, however, rely on a different questionnaire, which indicates the importance of using standardized questionnaires that have been validated in both binary and non-binary individuals to assess gender dysphoria in the future. Nevertheless, the current data indicate that NBGQ do not suffer from gender dysphoria to the same degree as binary transgender individuals. This suggests that there is a need for clinicians to develop treatment paths different from the ones applied to binary transgender individuals, as those might not be sufficiently adapted to the wishes and needs of NBGQ individuals in terms of alleviating gender dysphoria (Jones et al., 2019; Taylor et al., 2019).

In terms of general life satisfaction, the NBGQ group scored significantly lower than the cisgender group, but not different from the binary transgender group. This corresponds with the findings of Jones et al. (2019), who found the

same pattern in terms of life satisfaction and quality of life. However, another study (using the same questionnaire assessing general life satisfaction as the current study) found that binary transgender individuals scored lower than NBGQ individuals (Rimes et al., 2017). Although this study did not directly compare the gender minority groups to a cisgender group, they did report that the scores from the NBGQ and binary transgender groups were lower than in general population studies (Diener et al., 1985; Rimes et al., 2017). The inconsistency in findings regarding the NBGQ and binary transgender individuals might be related to differences in sample, as Rimes et al. (2017) focused on gender binary youth, while Jones et al. (2019) and our study also included older individuals. If this is the case, this could either mean that older binary transgender individuals show *more* general life satisfaction, or older NBGQ individuals show *less* general life satisfaction, or a combination of both. Future studies should investigate how general life satisfaction differs in gender minorities across various age groups and which factors could explain possible fluctuations.

In the literature on transgender individuals, differences in general life satisfaction and mental health are often explained using the Minority Stress Model (Meyer, 1995, 2003). Our finding that NBGQ and binary transgender groups reported less life satisfaction than the cisgender group fits this model, thereby explaining how a (gender) minority status can lead to lowered mental and physical health through experiences of discrimination. These experiences of discrimination are possibly reflected in our sample too, with the binary transgender and NBGQ group reporting higher unemployment rates and more often living with their parents or family. However, while both gender minority groups might share some of the factors that negatively affect life satisfaction, such as experiences with transphobia, interpersonal challenges and discrimination in public spaces, qualitative studies did suggest different pathways for NBGQ compared to binary transgender individuals (Fiani & Han, 2018). For instance, NBGQ individuals can feel excluded from binary transgender spaces (Fiani & Han, 2018) and might experience more societal

intolerance due to violating the gender binary norm (Burgwal et al., 2019). However, the lack of a difference in general life satisfaction between the NBGQ and binary transgender groups in our sample suggests that NBGQ individuals can counteract these unique challenges. For instance, Fiani and Han (2018) reported resilience in NBGQ individuals who manage to redefine and reclaim their identities regardless of societal norms. The mechanisms affecting general life satisfaction for NBGQ individuals specifically should be a focus of future research.

Interestingly, the three groups in our sample did not differ significantly in terms of anxiety or depression. While Jones et al. (2019) found that NBGQ scored lower on mental health than cisgender individuals but higher than binary transgender individuals, Thorne et al. (2018) found that NBGQ individuals scored higher on both anxiety and depression than binary transgender individuals. However, the latter study included only treatment seeking NBGQ individuals in their sample, which are likely to encounter very specific challenges compared to treatment seeking binary transgender individuals. Warren, Smalley, & Barefoot (2016), who recruited a community sample of NBGQ individuals, binary transgender individuals, and sexual minority cisgender individuals, found that the NBGQ group did not differ from either two other groups in terms of anxiety and depression, while the binary transgender group scored higher than the cisgender group. The lack of differences between any of the groups in our sample was thus rather unexpected. It should be noted that, especially for the anxiety subscale, the scores in our cisgender sample are relatively high compared to other community samples (e.g., Hinz & Brähler, 2011; Hinz et al., 2014), even reaching scores above the cutoff of normality (Zigmond & Snaith, 1983). Perhaps this was due to the fact that our study was conducted in the middle of the COVID-19 pandemic, which posed serious threats to mental health for many (Wang et al., 2020) and might have elevated the scores in our cisgender sample, affecting the difference with the other two groups. However, it has been suggested that the pandemic negatively affected mental health in (young) trans and gender

diverse individuals as well, specifically by elevating anxiety and depression (Jones et al., 2021).

Sexual well-being in NBGQ individuals

In terms of sexual well-being, the only differences between the NBGQ group and the other two groups were that they scored lower on sexual esteem related to body perception compared to the cisgender group, and lower on transgender-specific body worries than the binary transgender group. The binary transgender and the cisgender group differed much more, with the binary transgender group scoring lower on sexual esteem related to body perception, attractiveness, conduct and behavior, and on sexual satisfaction. For these variables, the scores of the NBGQ groups seemed to fall in between the two other groups (see Table 4), resulting in marginally significant differences with the cisgender group.

The fact that sexual esteem related to body perception was lower in NBGQ and binary transgender individuals compared to cisgender individuals is in line with findings from qualitative research on sexual well-being in gender minorities. For instance, Martin and Coolhart (2019) described how for many NBGQ and transgender individuals body dysphoria interferes with their sexual experiences. Participants described a disconnection between body and mind, leading to distressing thoughts during sexual encounters. Similarly, Lindley et al. (2020) indicated how gender minority individuals sometimes desire different body parts in order to reach sexual satisfaction. Our study provides the first quantitative data to confirm that sexual esteem related to body perception is lower in NBGQ individuals. However, it should be indicated that gender and body dysphoria are not the only components affecting sexual well-being in NBGQ and binary transgender individuals, but that relationship and partner factors might be just as important (Lindley et al., 2021), which is something we did not specifically address in this study.

Lindley et al. (2021) showed that sexual well-being in NBGQ and transgender individuals is influenced by both universal determinants and trans-specific factors, such as bodily comfort. While the NBGQ and binary transgender groups

in our sample did not differ from each other on any of the sexual esteem components or on sexual satisfaction, the binary transgender group scored higher on trans-specific body image worries. It should be noted that the T-WORRY questionnaire was presented only to those identifying as transgender, which applied to only a subgroup of the NBGQ individuals. This makes the difference between the two groups even more interesting, because they share a transgender identity. Our results indicated that binary transgender individuals worry more about their bodies in a sexual context. While these worries have been described in the literature before (Dharma et al., 2019; Lindley et al., 2020; 2021; Martin & Coolhart, 2019), our study is the first to map differences between binary and non-binary transgender individuals. Possibly, this difference is explained by the fact that our NBGQ sample reported lower gender dysphoria compared to the binary transgender sample, since the T-WORRY questionnaire includes items related to gender dysphoria (e.g., “When I think about having sex, I worry that I cannot have the sex I want until I have a(nother) surgery”). Whether these differences can be ascribed to less gender dysphoria in NBGQ individuals or to other factors should be explored in further research. Interestingly, the difference in transgender specific body worries between the two groups does not directly translate into a difference in sexual satisfaction. This suggests that either the binary transgender group has developed mechanisms to cope with their transgender specific body worries, or that these worries are not directly related to sexual satisfaction.

Finally, we want to point out the pattern of scores on sexual esteem related to behavior, conduct, and attractiveness, and sexual satisfaction. While the NBGQ group did not differ from the other two groups on these variables, the scores in Table 4 present a pattern in which the NBGQ seems to fall in between the other two groups, with the binary transgender group scoring lowest and the cisgender group scoring highest. While this lack of significant differences indeed possibly indicates that there are no differences, it is also plausible that our results failed to reach significance due to the use of conservative statistics

(Bonferroni correction) and a sample size too low to reach sufficient power. Future studies could therefore further investigate this pattern with larger samples of NBGQ individuals.

Sexual self-concept discrepancies in NBGQ individuals

Sexual self-concept discrepancies refer to the discrepancy between one's actual sexual self-concept and either their ideal or their ought sexual self-concept. We found that for both actual/ideal and actual/ought discrepancies, NBGQ and binary transgender individuals scored higher than cisgender individuals, but that the two gender minority groups did not differ from each other. This means that for both NBGQ and binary transgender people, their actual sexual self-concept (all the ideas about who they are as a sexual person) is further away from their ideal sexual self-concept (all the ideas about who they want to be as a sexual person) and their ought sexual self-concept (all the ideas about who they should be as a sexual person) compared to cisgender individuals. This is hinted upon in the few qualitative studies on sexuality in NBGQ individuals, which have described strategies NBGQ and transgender individuals employ to diminish their confrontation with how they are not who they want to be (Martin & Coolhart, 2019). For instance, they can turn the light off and limit touch to body parts that they are comfortable with. Interestingly, while in our sample the NBGQ individuals scored lower on gender dysphoria compared to the binary transgender group, this does not translate to a difference in sexual self-concept discrepancies between these two groups, indicating the possibility that factors other than gender dysphoria affect these discrepancies. For actual/ought sexual self-concept discrepancies, this seems rather intuitive: it is possible that these are mostly affected by societal and other social messages gender minority individuals receive about who they should be as a sexual person and that gender dysphoria itself stays out of the equation, which is something to be explored in future research. However, we did expect such societal influences to affect NBGQ individuals' actual/ought sexual self-concept

discrepancies more, since previous studies have reported how they face unique challenges compared to binary transgender individuals (Fiani & Han, 2018). The lack of differences in actual/ideal sexual self-concept discrepancies between NBGQ and binary transgender individuals is also difficult to explain. Given that NBGQ individuals reported less gender dysphoria than binary transgender individuals, it is unlikely that the large actual/ideal self-concept discrepancies in the former group are merely influenced by gender incongruence. This indicates that factors other than gender incongruence related distress stand in the way of NBGQ individuals to sexually be who they want to be. Future studies should investigate what factors facilitate (e.g., experiences of discrimination, body dissatisfaction) or inhibit (e.g., partner dynamics, role models, sense of community) actual/ideal sexual self-concept discrepancies for both groups in order to investigate how to diminish those discrepancies.

Limitations

Although this was the first study to provide quantitative data on sexual well-being in NBGQ individuals, there are several limitations we need to take into account. First, by recruiting via the internet, we have mainly reached young, Western people, which limits generalizability of our results. Similarly, it was clearly communicated to potential participants that the study addressed issues related to sexuality, which also likely induced a self-selection bias. For instance, this could have caused the study to mostly attract participants who are fairly comfortable with their sexuality, or participants who experience sexual problems and want this to be given scientific attention. Second, while all questionnaires showed sufficient reliability in all subgroups, not all questionnaires were previously validated for gender minorities. Specifically, the gender dysphoria measure we used was developed within a binary framework. Where needed, we tailored all questions to be appropriate for NBGQ and binary transgender individuals. Nevertheless, we received feedback that the questionnaire was not always suitable for asexual or polyamorous individuals, which we will take into account in future studies. Third,

participants were allowed to leave questions open or leave the survey early, resulting in dropout throughout the survey.

Conclusion

We conducted an online survey on mental well-being, sexual well-being, and sexual self-concept discrepancies in NBGQ, binary transgender, and cisgender individuals. NBGQ individuals scored similar to binary transgender individuals on most aspects, except for gender dysphoria and transgender specific body image worries, on which binary transgender individuals scored higher. Compared to cisgender individuals, NBGQ individuals score lower on general life satisfaction and sexual esteem related to body perception, and higher on gender dysphoria and sexual self-concept discrepancies. Future studies should focus on whether lower mental and sexual well-being as well as higher sexual self-concept discrepancies in NBGQ and binary transgender individuals are caused by the same mechanisms in order to provide tailored solutions for various gender diverse groups.

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